Christmas Issue

SkyWaves

December Sachse Amateur Radio Association W5SRA 2024

Sachse Amateur Radio Association

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- **Ham Radio Christmas Wishbook** *supplement*
- *Meeting Minutes*
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1. AMATEUR RADIO FUN 2. EMERGENCY COMMS

SARA Club Officers for 2024-2025

Current officers for the Sachse Amateur Radio Association, per the election held at the September 2024 General Meeting.

President	Andy Barnes	W5KZJ
Vice President	Jeff Feldman	KI5DDX
Secretary	Kathy Wingo	KI5LEY
Treasurer	Ev Wingo	KI5LEX
Public Information Officer	Lisa Barnes	KG5OBK
Director at Large	Jim Szot	N5JS
Newsletter Editor	Lonnie Webb	KG5WHQ

JOIN THE ARRL

As an ARRL Affiliated Club, SARA receives a commission for every new ARRL membership and renewal we submit to ARRL Headquarters and get to retain a portion of the dues for each regular membership submitted.

Clubs retain $15 for each new membership OR lapsed membership (of two years or more). A NEW MEMBER is defined as any individual who has never been a member of ARRL or any individual who has not retained a membership for two or more calendar years prior to the application submission.

Clubs retain $5 for each renewal. A RENEWING MEMBER can renew at anytime, even before their current membership term expires.

You can download the ARRL Affiliated Club Membership form here.

Once downloaded, complete the form and get it to the club Treasurer along with a check made out to 'Sachse Amateur Radio Association' and we will submit your ARRL membership application/renewal to ARRL Headquarters. (NOTE: ARRL Headquarters is working on getting an on-line version working so that you can go directly to them and the ARRL will send the club a check for any new or renewed memberships.)

This month's links can all be found here:

`https://bit.ly/m/sachseradio`

THIS IS AN AI-FREE ZONE. WHILE A.I. MIGHT CORRECT OUR GRAMMAR, ALL CONTENT USED IN THIS NEWSLETTER IS PRODUCED BY HUMAN HANDS. DUE TO LICENSING CONCERNS THAT A.I. VIOLATES, WE URGE CONTRIBUTORS TO RESPECT THIS POLICY.

UPCOMING EVENTS

CHRISTMAS PARTY

Saturday, December 7th, 6:30p
Napoli's Italian Restaurant
701 N State Hwy 78
Wylie, TX 75098

NEXT MEETING

Thursday, January 9th, 7:30p
North Pointe Church of Christ
7030 TX-78
Sachse, TX 75048

NEXT INFO NET

Every Monday - "SARA Weekly Information Net" 7:00pm
W5SRA Repeater

SARA Club Repeater

W5SRA
440.350 MHz
Offset +5.00 Mhz
PL tone: 110.9

Future SARA General Meeting Topics

December 7th - Christmas Party

Murphy CERT now on W5SRA Repeater

Every third Wednesday the Murphy CERT net be on the club repeater. The net will begin at 19:00 central time. Listen in to our growing ham and preparedness community.

Laurel Testing License Grants

Laurel testing for November was held November 16, 2024 at the North Pointe Church of Christ in Sachse.

The next opportunity for license testing, and a new membership to SARA, will happen December 21, 2024.

QSO Breakfast

Meet us every Saturday at 7:30am for breakfest at
Ballard Street Cafe, 112 N. Ballard in downtown Wylie.

People begin showing up around 7:00am with most showing up by 7:30am.

Sunday Public Service Net

December 8 and 22

W5SRA Repeater
8:00 PM
Frequency: 440.350 MHz
Shift: +5MHz
PL tone: 110.9 (Tx & Rx)

Upcoming W5SRA Laurel Testing

December 21—9:00 to 11:00am
7030 S. State Hwy 78, Sachse, TX 75048

Contact:
W5JWS (John) 214.799.9927
w5jws@arrl.net
for additional details and to verify testing session is still open.

Where's Mic-o

Hidden somewhere in the newsletter is a microphone like the one to the right.

Next Board Meeting:

December 12, 2024 7pm
via Google Meet
(requires Google acct)

https://bit.ly/3AxxSPJ

Find us on
Facebook!

Did you know you can keep up with events and conversations between newsletters by joining the Sachse Amateur Radio Association on Facebook?

https://bit.ly/sara-facebook-group

QUESTIONS?

ASK SOMEBODY!

THERE ARE MANY OF US—LET'S HAVE FUN!

NEWSLETTER ARTICLES

Working on a project that you think the club members would be interested in? Read a good HAM related article somewhere? Send articles to SARA Newsletter Editor:
newslettereditor@sachseradio.org

ACTIVITIES COMMITTEE

SARA vice-president Jeff Feldman KI5DDX heads up the SARA Activities Committee. Anyone who is willing to help or has ideas may email Jeff:
vicepresident@sachseradio.org

SARA BRANDED GEAR

We now have two suppliers for SARA gear. Both of these companies have our logo on file.

HamThreads deliver custom hats, shirts, jackets and vests with SARA's logo. They can do single items. HamThreads is in Saginaw.
https://www.hamthreads.com

SARA NAME BADGES

If you don't have a SARA name badge, turn to namebadge.com. Please go to:
https://namebadge.com/sachse

Letters

Thank you for reading SkyWaves! I can't tell you how surprising the response to what we have done here this year has been. It should be pointed out that I made several flubs in the last newsletter with cut-n-paste errors. Thank you for not burning me at the stake. Btw, I failed to mention in my APRS piece it owes thanks to videos made by KM4ACK. Thank you, Jason!

Re: Nov SARA Skywaves

Mico is in Figure 1. A Digital Voltmeter And irreverent is an understatement - LOL. Kacie didn't see that before you released it did she :)

—John Smyder W5JWS

No, she did not!

Re: Nov SARA Skywaves

Love your efforts on the NewsLetter, Lonnie!

—Mark Mantooth

Question about "Baluns II"

Mr. Jim! Why is self resonance an issue in you 80MHz example of the Ruthroff core?

—A young ham wants to know!

Self-resonance in any coil occurs when the frequency gets high enough for the interwinding capacitance to equal the inductance. If that happens in a balun winding, the winding no longer acts like an inductor, and the SWR goes crazy.

In the case of the Ruthroff balun we tested, that balun will never be used above 30 MHz - so no problem.

Another issue is the curie temperature of the magnetic core. If the balun temperature gets too hot, the magnetic core ceases to be magnetic, and the windings act like the core is air. Again, the SWR goes nuts. Letting the core cool off usually allows everything to return to "normal".

Does that help?

—Jim KG5WAW

Re: Nov SARA Skywaves

Looks great! Can I subscribe?

—KX6J

Thank you for the reassuring words! You can sub by sending me an email to newslettereditor@sachseradio.org

Re: Nov SARA Skywaves

In the opposite to the last edition, its got fresher and the layout is much more pleasant.

—DO1FER

Thank you. DO1FER! I am learning!73!

Re: Nov SARA Skywaves

Hi!

Nicely done and interesting.

Thanks from NY.

—KF2ZZ

Oh, thank you!

Re: Nov SARA Skywaves

Kudos 4 your work in producing a 21st century relevant digital product, that 95% of the folks who visit the website can navigate very easily. It is easy to see your group takes their local, plus all other AR OPs seriously and has a portal that anyone can submit their idea, critique to help your group expand it's ranks.

Along with your weekly scheduled breakfasts, a scheduled monthly dinner can be inserted for 1 week instead of the early morning in person QSO session. This could open the door for additional people to join the club's ranks, that can't make the weekly morning breakfast sessions. Tuesday night when most restaurants are dead might be a good starting point. It is refreshing to see there are still nimble, forward thinking AR clubs still out here in 2024. Good luck and keep up the good work.

—W5INC

As a person who eats on occasion, I like where you are coming from, W5INC! 73!

1 sure fire way that never misses to attract people, is invite them over to partake of some W5SRA club real Texas BBQ[...]If you want to catch fish you have to throw bait in the water. Excellent BBQ plus all of the fixins will get people in your door.[...]it is now up to the club members to set the hook, tighten the drag, to help reel in new members into your club. If you want your club to stay active and current, set some realistic goals that members would like the club to attain and set the date. Far better to have an actual realistic goal(s) for the club to aim for, that just floating aimlessly out yonder. Once the intended goal(s) is positively reached, the group can point their collective efforts towards more positive goals the members would like to achieve in the near future. Most importantly, dare to fail.

—W5INC

I fail quite well! My wife and I make BBQ for field day except for years we are out of town.

I cannot turn down a good BBQ myself ;) or a shooting match..

Re: Nov SARA Skywaves

Another nice newsletter . . . good job! I'm so happy to see clubs pick up the baton and start building true value for readers. The Loggers Bark, and now this one . . . great stuff.

—Dave, W7DGJ

Thank you, Dave!

W7DGJ is a frequent columnist on QRZ and is known for work

THIS MONTH

I have a present for you!

So, we all know that the vendors who make our bright shiny toys for ham radio are vital. They have taken a pounding and are in the process of coming back to profitability.

We are working with several vendors, small and large, to bring you awareness of potential gifts that are largely budget friendly and placed them in a Wish Book supplement at the end of the newsletter.

Note that specifically we asked for no compensation to list products from our vendors.

Advice for the average Ham: Print those pages and place them in the spouse's restroom, make up table, steering console...you get the idea!

This was truly a last minute effort and to make it successful, I am asking those who are able, please pick up something from these participants. ***Phone*** them up and ***email*** them—let them know *SkyWaves Ham Radio Wish Book* made a sale for them.

With all our efforts together, we might do this again in 2025.

Merry Christmas—ed!

with Audio-Technica and a column in SCIENCE. SkyWaves is getting encouragement.

One little note here on our distribution. 162 people received the November newsletter and an additional 2711 have found us through QRZ. Radio is active. Upward to 5000 have hit the *Ghost in the Noise* audio on Radio Engine YouTube and Rumble channels.

I need your help now. Whether as notes scratched out or a written column or a video—I need you.

So, with that said, go grab another ham and have fun. And keep learning!

—editor,
newlettereditor@sachseradio.org
◆

Make a good habit
Carry an HT for the next year

URGENT NEED

Next issue rolls into 2025 and we have already used up my canned topics! This month is kind of thin due to the amount of club members and readers traveling.

With a reach of just about 3,000 readers, I am calling on you, you wonderful hams, to write me a note and send me a picture about your prettiest project, your loftiest log entry, and your spiffiest blue smoke let out!

I don't have budget for assets or bribes so I am asking for the *high price* of elbow grease to keep this darling newsletter free. And I know by the letters I get that you value what we do here.

—editor.◆

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Meeting Minutes

Sachse Amateur Radio Association
General Meeting Minutes
November 14, 2024

Start time: 7:31 p.m.

Location: North Pointe Church

Facilitator: President Andy Barnes **W5KZJ**
Everyone stood and joined in to say The Pledge of Allegiance.
Welcome to members and guests as they introduced themselves with names and call signs.

Attendees:

Andy Barnes **W5KZJ**	Kathy Wingo **KI5LEY**	Lisa Barnes **KG5OBK**
Jeff Feldman **KI5DDX**	Lonnie Webb **KG5WHQ**	Tony Fiorda **WB8ZWI**
Rusty Cain **KG5WFM**	Linda Smyder **K5LCS**	John Smyder **W5JWS**
Jim Szot **N5JS**	Andrea Hoffman **W5UWE**	Larry Hoffman **W5UWF**
William Newman **WL9N**	Tim Valis **KK5TIM**	

Presentation:

Members of SARA wish to thank William Newman **WL9N** the District Radio Officer (DRO) 04 DFW of Texas State RACES for his presentation.

President's Report – Andy Barnes W5KZJ

The next Board Meeting will be held on Thursday November 21st at 7 p.m. via Google Meet. There is a link in SARA Skywaves, all are welcome.

The next General SARA Meeting will be our annual Christmas Party on Saturday, December 7th , 6:30 p.m. at Napoli's Restaurant, 701 N. State Hwy. 78, Wylie, TX.

December's Board Meeting will be Thursday December 12th at 7 p.m. via Google Meet.

Upcoming General Meeting Subject Plans:

- December – Christmas Dinner will be December 7th at Napoli's Restaurant, 701 N. State Hwy 78, Wylie, TX at 6:00 p.m.
- January – Matt Jamison **KI5PGL** will share his experiences on communication through satellite repeaters.

Future General Meeting Topics:

- Ideas for upcoming meetings
- Please help with the subject matter

Vice-President's Report – Jeff Feldman KI5DDX

If members wish to participate in Winter Field Day they need to contact Jeff Feldman KI5DDX no later than December 12, 2024. If there is not enough participation, the club will not conduct Winter Field Day.

Meeting Minutes – Kathy Wingo KI5LEY

The minutes for October 10, 2024, meeting was in the newsletter and on the website.

MOTION: Lonnie Webb **KG5WHQ** made a Motion to approve October 10, 2024, meeting minutes. Tony Fiorda **WB8ZWI** seconded the motion. Motion carried unanimously.

Treasurer Report – Ev Wingo KI5LEX

October 2024 Treasurer Report was presented to the members.

A copy of the financial report is available to members upon request.

MOTION: Kathy Wingo **KI5LEY** made a Motion to approve the October financial report. Lisa Barnes **KG5OBK** seconded the motion. Motion carried unanimously.

Public Information Officer's Report – Lisa Barnes KG5OBK

- Saturday QSO Breakfast at the Ballard Street Café @ 7:30 a.m.
- SARA's Weekly Information Net, Monday at 7:00 p.m.
- Next Laurel VE Session November 16th @ North Pointe Church, 9 – 11 a.m.

John Smyder **W5JWS** stated that beginning in January Chuck Dockery **N7UQ** will be in charge of the Laurel VE Sessions.

SARA Information Net

The SARA Information Net is being held on Monday, at 7:00 p.m. Weekly Information Net Control:

November 18th Kathy Wingo **KI5LEY**
November 25th Ev Wingo **KI5LEX**
December 2nd Andy Barnes **W5KZJ**
December 9th Kathy Wingo **KI5LEY**
December 16th Andy Barnes **W5KZJ**
December 23rd Jeff Feldman **KI5DDX**
December 30th Ev Wingo **KI5LEX**
January 6th Andy Barnes **W5KZJ**

Newsletter Editor's Report – Lonnie Webb KG5WHQ

The November newsletter has been posted to the website and emailed to membership (distribution 161).

Submissions for the newsletter are due by the 25th of each month. The goal is to have the newsletter out on the 1st of each month.

Article Ideas:

- Projects that you are working on or have completed,
- Events and activities related to amateur radio,
- Articles you have read in other publications,

Remember, our distribution is beyond our membership and our content could encourage other people to come get involved!!

Send pictures and articles to newslettereditor@sachseradio.org
President Andy Barnes W5KZJ stated that he wished to see member spotlights in the newsletter so that we can begin to know each other better. Members should do a 2 paragraph write up about themselves and send to the Newsletter Editor.

Also, if you send pictures of any event, project, etc. to the Newsletter Editor they will be included in the newsletter.

Lonnie Webb KG5WHQ, Newsletter Editor, stated that we are nearing the 1,900 mark of the number of people reading the SARA Skywaves via QRZ.

Other Business:

No other business.

Adjournment:

MOTION: Kathy Wingo KI5LEY made a Motion to adjourn the meeting at 9:07 p.m. Lonnie Webb KG5WHQ seconded the motion. Motion carried unanimously..

Respectively Submitted by
Kathy Wingo KI5LEY◆

Lite Tech Corner

By Bob DeVance, K5CRX
bdevance@rdcons.com

Last month we started a conversation about using a VOM to check out an errant lamp in our QTH. We had used the VOM to check the AC voltage out of the wall socket and found that to be OK. Then we removed the bulb and ran a resistance check on it to find a low resistance indicating that the bulb is OK. But – the lamp still doesn't come on. Now what? Well – what's left to give a problem? How about the power cord, the switch, or the lamp socket?

Let's start with the easiest first – the power cord. Be *SURE* the cord is unplugged at the wall!! Look at the bulb socket. Generally, there is a brass shell that snaps apart to reveal the inner workings of the socket. With a very small screwdriver, pry the shell apart. Lift the socket assembly out of the shell so you can see the power cord connections. With the VOM on a low resistance scale, place one probe on one of the AC plug blades and the other on one of the power cord ends at the socket. A near zero resistance indicates that side of the cord is OK. If there's no reading (indicating an open circuit), move the probe to the other cord end on the socket (in case the probes are not connected to the same wire!). Again, if there's a near zero reading, that side of the cord is OK – move the probes to the other prong on the plug and the other cord end at the socket and look for a near zero reading again indicating that that side of the cord is OK. If either side of the cord gives an open (infinity) reading, that side of the power cord is bad – replace the cord.

Assuming the cord is OK, let's move to the switch and socket. The switch is the most likely culprit as it is a mechanical device. Place a probe tip on one connection to the switch and the other probe tip to the other switch connection. Still using the previous resistance setting, look for a near zero reading indicating the switch is OK. If the reading indicates an open circuit, rotate or flip the switch to the other on/off position and repeat the test. Again, open = bad, near zero reading = good. Open on both on and off positions indicates a bad switch – these are easy to replace.

And lastly, if cord and switch check OK, that leaves the socket. You can test the socket in the same manner as the power cord looking for open (defective) circuits. Often the socket and switch are one piece so a replacement decision is simple.

Now to apply this skill to other areas:

• Mobile radio won't turn on – bad fuse, bad wire, bad connection?

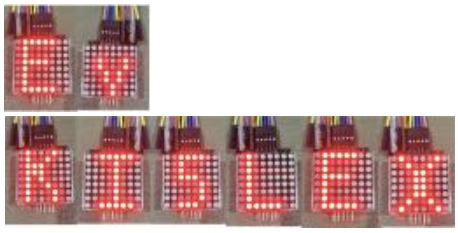
• Rechargeable battery – charged or discharged?

Figure 1. A Digital Voltmeter

• Intermittent mic transmit connection – bad wire or connection?

An expensive VOM is a valuable asset in the Ham's toolkit. If you don't have one, get one soon and give it a workout. If you do have one, use it to save yourself some time and grief.◆

Learning Arduino



Part Two—This Thing is Pretty Cool!

By Ev Wingo KI5LEX
ev@wingofamily.com

When we last met, we had learned to say, "Hello World!" in Arduino. Well, in Arduino C++. A lot has happened in the last month on the Arduino front.

A little software-specific talk

I mentioned in last month's column that at first glance, the language I saw in the Arduino Integrated Development Environment (Ardu IDE) looked a lot like the classic programming language "C". The Ardu IDE language is actually C++. I'm not sure if it supports all the capabilities and differences that a fully functional C++ environment would have that C would not. For example:

C++ offers significant capabilities beyond C, primarily through its support for object-oriented programming features like classes, inheritance, and polymorphism, allowing for more complex and modular code design, while also including additional functionalities like exception handling, function overloading, and a robust standard template library (STL) for efficient data structures and algorithms, which are not present in C.

Wow – that's some real computer science nerd talk right there. If you actually read all that in the last paragraph, you now have permission to forget it. The point I wanted to make is that the Ardu IDE does allow class structures with inheritance and

polymorphism. These are (in my opinion) the most useful C++ capabilities and are worth the time to learn. Some of the examples in this month's column will use these.

What else can this little electronic device do?

The example code that comes with the hardware kit provides an example on how each sensor/device that the Ardu can control is accessed and made to "work". Here is a list of some of the devices that I received:

Monochrome & RGB LEDs
Push switch, Ball switch, and Membrane switch
Speaker
Buzzer
Servo motor
Motion sensor
Temperature and humidity sensor
Analog joystick
IR receiver
Dot matrix LED display
Accelerometer and gyroscope
Passive infrared motion sensor
Etc., etc. – the list is extensive. If you can think of a capability you would like to try, I bet it is included with the hardware in the kits I received.

In this column I will detail using the dot matrix LED display a little later.

Basically, all these devices connect to the Ardu controller in the same manner. Each needs power and ground along with one-to-several data control, input and output connections to the Ardu. I haven't tried to control every device; however, I feel given what I've learned so far I would be able to make every one of them work.

Let's take a detailed look at the Dot matrix LED display.

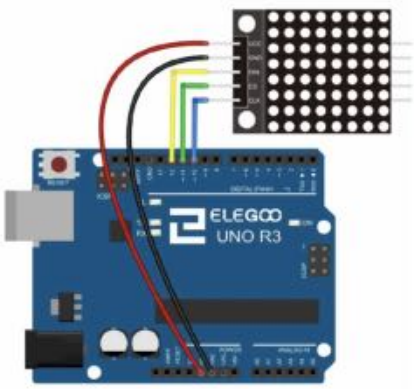
The Dot matrix LED looks like this:

This has 5 connections to the Ardu controller.

- Power
- Ground
- Digital Input–receives data from the Ardu controller
- MOSI pin–Master Out Slave In
- MISO pin–Master In Slave Out

The last 2 pins are used when multiple displays are driven by one Ardu. This capability is beyond the scope of this article.

When wired, the connections look like this:



As you might imagine, the code to control this device is somewhat involved. I'll go through the code that is sent with the kit and explain each part. WARNING – If you're not a code person, this is a little involved, and probably quite boring.

What follows is the entire *.ino file for the Matrix LED project. Every line that starts with // is a comment and has no impact on the Ardu controlling the matrix LED device. Also, a "paragraph" of comments is preceded with /*, and followed with */. My added text commentary for this column will be in this blue color.

```
//www.elegoo.com
//2016.12.9
//We always have to
include the library
```

I mentioned in last months column "This looks a lot like C. No *.h or #include files, but I suppose that comes later." Indeed, it did come later, and this sample code makes use of both the #include statement and *.h file capability. The contents of the specific *.h file is added to the code at compilation.

We will not examine it as a part of this exercise today.

```
#include "LedControl.h"
```

This is a "paragraph" of comments between the /* and */. Stating that there is "only a single MAX72XX" indicates that one Ardu controller can control multiple LED matrix displays. Such capability is beyond the scope of this example.

```
/* Now we need a
LedControl to work with.
***** These pin numbers
will probably not work
with your hardware *****
pin 12 is connected to
the DataIn pin 11 is
connected to LOAD(CS)
pin 10 is connected to
the CLK
We have only a single
MAX72XX.*/
```

Some C++ is used here. A class variable (lc) is created. Because the LedControl.h file is included with all this, the ARDU IDE knows that a variable (lc) of type LedControl can be created and given a set of default values (12,10,11,1). Sorry – I can't help myself – Good coding practice would be to use a #define statement for each of the 12, 10, 11, 1 values that would describe in words what each of the numbers mean and does. Just Sayin'.....

```
LedControl lc =
LedControl(12,10,11,1);
```

The Ardu sends data for one row of LEDs one string at a time. If you send 8 rows of data, and immediately send another 8 rows, your eye will never see anything discernable. It is necessary to pause the controlling program to give the eye time to understand what is

being displayed. These two "unsigned long" variables are 32-bit integers that are always positive, and are used to pause the program for a specified number of milliseconds (value of 1000 = 1 second).

```
/* we always wait a bit between updates of the display */
unsigned long delaytime1=500;
unsigned long delaytime2=50;
```

Remember, every Ardu sketch must have a setup() function, and a loop() function. The setup() function runs once when the sketch first starts, and a loop() function that runs continuously after that. This setup() function is well documented by the author.

```
void setup() {
/* The MAX72XX is in power-saving mode on startup, we have to do a wakeup call */
lc.shutdown(0,false);
/* Set the brightness to a medium values */
lc.setIntensity(0,8);
/* and clear the display */
lc.clearDisplay(0);
}
```

The loop() function for this sketch makes use of several separate functions which are defined as follows.

First, the word "arduino" is sent to the 8x8 LED matrix. Note that the function documentation as received from the original author states that a 5x7 matrix of LEDs is used to display "a r d u i n o". Not sure why the 8x8 capability of the hardware was not used.

```
/* This method will display the characters for the word "arduino"; one after the other on the matrix.(you need at least 5x7 leds to see the whole character) */
```

Define 7 array[5] variables of type "byte" (an 8-bit variable) with the binary values shown in each byte.

```
void writeArduinoOnMatrix()
{
/* here is the data for the characters */
byte a[5] = {B01111110,B10001000,B10001000,B10001000,B01111110}; // The 5 rows that make up the "a"
byte r[5] = {B00010000,B00100000,B00100000,B00010000,B00111110}; // The 5 rows that make up the "r"
byte d[5] = {B11111110,B00010010,B00100010,B00100010,B00011100}; // The 5 rows that make up the "d"
byte u[5] = {B00111110,B00000100,B00000010,B00000010,B00111100}; // The 5 rows that make up the "u"
byte i[5] = {B00000000,B00000010,B10111110,B00100010,B00000000}; // The 5 rows that make up the "i"
byte n[5] = {B00011110,B00100000,B00100000,B00010000,B00111110}; // The 5 rows that make up the "n"
byte o[5] = {B00011100,B00100010,B00100010,B00100010,B00011100}; // The 5 rows that make up the "o"
```

Notice that each member of the byte array is indexed starting at "0" – that is, the five elements in the "byte a[5]" array are a[0], a[1], a[2], a[3], a[4]. What follows is the code that will write each letter of "arduino" to the LED matrix display, with a 500 ms delay between each letter (see the value of delaytime1 set at the beginning of the code).

```
/* now display them one by one with a small delay */
lc.setRow(0,0,a[0]);
lc.setRow(0,1,a[1]);
lc.setRow(0,2,a[2]);
lc.setRow(0,3,a[3]);
lc.setRow(0,4,a[4]);
delay(delaytime1);
lc.setRow(0,0,r[0]);
lc.setRow(0,1,r[1]);
lc.setRow(0,2,r[2]);
lc.setRow(0,3,r[3]);
lc.setRow(0,4,r[4]);
delay(delaytime1);
lc.setRow(0,0,d[0]);
lc.setRow(0,1,d[1]);
lc.setRow(0,2,d[2]);
lc.setRow(0,3,d[3]);
lc.setRow(0,4,d[4]);
delay(delaytime1);
lc.setRow(0,0,u[0]);
lc.setRow(0,1,u[1]);
lc.setRow(0,2,u[2]);
lc.setRow(0,3,u[3]);
lc.setRow(0,4,u[4]);
delay(delaytime1);
lc.setRow(0,0,i[0]);
lc.setRow(0,1,i[1]);
lc.setRow(0,2,i[2]);
lc.setRow(0,3,i[3]);
lc.setRow(0,4,i[4]);
delay(delaytime1);
lc.setRow(0,0,n[0]);
lc.setRow(0,1,n[1]);
lc.setRow(0,2,n[2]);
lc.setRow(0,3,n[3]);
lc.setRow(0,4,n[4]);
delay(delaytime1);
lc.setRow(0,0,o[0]);
lc.setRow(0,1,o[1]);
lc.setRow(0,2,o[2]);
lc.setRow(0,3,o[3]);
lc.setRow(0,4,o[4]);
delay(delaytime1);
lc.setRow(0,0,0);
lc.setRow(0,1,0);
lc.setRow(0,2,0);
lc.setRow(0,3,0);
lc.setRow(0,4,0);
```

```
delay(delaytime1);
}
```

As you might have guessed, there is a capability within the programming language that allows you to cycle repeatedly through the set of tasks instead of repeating each line over and over, just by changing one value in each line (in the above examples). We see this "for" looping capability in the next 3 functions. These three functions create a small light show on the 8x8 LED matrix.

Also, notice that the "lc.setRow()" function has constant values set for the function's third parameter, instead of a variable value used in the example above.

```
/* This function lights up a
some Leds in a row.
The pattern will be repeated
on every row.
The pattern will blink along
with the row-number.
row number 4 (index==3) will
blink 4 times etc.*/
void rows() {
for(int row=0;row<8;row++) {
delay(delaytime2);
lc.setRow(0,row,B10100000);
delay(delaytime2);
lc.setRow(0,row,(byte)0);
for(int i=0;i<row;i++) {
delay(delaytime2);
lc.setRow(0,row,B10100000);
delay(delaytime2);
lc.setRow(0,row,(byte)0);
}
}
}

/* This function lights up a
some Leds in a column.
The pattern will be repeated
on every column.
The pattern will blink along
with the column-number.
column number 4 (index==3)
will blink 4 times etc.*/
void columns() {
for(int col=0;col<8;col++) {
delay(delaytime2);
lc.setColumn(0,col,B10100000
);
delay(delaytime2);
lc.setColumn(0,col,(byte)0);
for(int i=0;i<col;i++) {
delay(delaytime2);
lc.setColumn(0,col,B10100000
);
delay(delaytime2);
lc.setColumn(0,col,(byte)0);
}
}
}
/* This function will light
up every Led on the matrix.
The led will blink along
with the row-number.
row number 4 (index==3) will
blink 4 times etc. */
void single() {
for(int row=0;row<8;row++) {
for(int col=0;col<8;col++) {
delay(delaytime2);
lc.setLed(0,row,col,true);
delay(delaytime2);
for(int i=0;i<col;i++) {
lc.setLed(0,row,col,false);
delay(delaytime2);
lc.setLed(0,row,col,true);
delay(delaytime2);
}
}
}
}
//----------------------------------------
```

Finally, the workhorse of the sketch is shown. This loop() function only has these four lines of code, each of which transfers to another function for the actual transmission of data from the Ardu to the LED Matrix.

```
void loop() {
Write the word "arduino"
writeArduinoOnMatrix();
Make each row of LEDs blink
rows();
Make each column of LEDs blink
columns();
Make each single LED blink
single();
}
//----------------------------------------
```

I messed around with this code and modified it to display my name (Ev), and my call sign (KI5LEX). Took some work, but was fun to do.

Next month – the real work begins. I bought the book.

So, for now 73.

Ev Wingo was Skywaves' previous newsletter editor and currently serving as SARA club treasurer. Refer to the first column in his series for product recommendations and a basic introduction.

treasurer@sachseradio.org ◆

TIME TO STABILIZE YOUR EMERGENCY GAS CAN AND GENTERATOR TANKS

Check your manual for instructions.

CW CORNER: GO-BOX TIPS AND TRICKS

By Jim Eatman, KG5WAW
eatman@compuserve.com

I'm retired. When the WX is nice, I go to local (city) parks and run my CW QRP gear.

Now I have friends who meet me out there. Last week, we had 2 CW operators, and two FT8 ops.

It's good to see the CW and the FT8 people finally getting together. We have a lot in common.

Figures of Merit

Let's start by seeing if we agree on what the benchmarks are:

- How fast can I set up and break down?
- How much gear do I have to carry?
- Once I get set up, how long does the battery last?
- What kind of performance can I expect?

Speed of Setup

I guess that this harks back to the days before the sunspot maximum... when propagation was a lot more sketchy than it is now. There were times when the bands were so bad that it wasn't worth being out there.

Being able to set up and break down quickly is really helpful in a lot of situations. Maybe the WX will turn bad on you, and you need to pack up quickly and get out.

It is really nice to be able to run portable without having to take a day off to do it. If you can set up quickly, you can do radio in the park if you only have 2 hours or so. Speed really frees you up - gives you options.

How Much Gear to Carry

Everything I use fits in a 6 can Igloo cooler. The cooler is cheap, it helps keep the gear dry, and it buffers the radio from temperature extremes. Quick thermal excursions are bad news for any electronic equipment. I even have a stake mount and a QRP manual screwdriver antenna in the box. Coax is RG-174, with BNCs. Not the best, but it packs small and light. My goal is, "One trip to the car." In other words, when I get to the park... everything goes to the picnic table in one trip. These days, it's usually the Igloo cooler in one hand, and a hamstick in the other hand.

I need a third hand for the donut and the coffee from the convenience store.

How Long Does the Battery Last?

I have one radio with a built-in battery. It's an 8 band uSDX clone. That battery will last longer than I will be at the park. 4 hours +. Battery life depends on duty cycle, caveat emptor.

The other radios run off of cheap LiPo batteries. They are small and light, but have their issues. I charge them in a fireproof sack. A 20 AH, 12 V LiPo battery is the size of 4 decks of cards.

LiPo batteries have high capacity for the size, but cannot source much current. Even my 20 AH LiPo is limited to about 2 A. LiFePO4 batteries are a better choice - safer, and can source more current. Most QRP operators use them.

Battery life is a function of current drain. I have analog radios that only take 50 mA on receive. The battery lasts nearly forever with those things. My newest radio is an SDR. It draws about 300 mA on receive.

Most QRP radios are about 50% efficient on transmit. So, figure 1 A to 2 A battery drain on transmit from a 12 V battery with a 5 W RF output.

What Kind of Performance am I Getting?

Performance of QRP gear is usually controlled by 2 things - antennas, and receiver sensitivity.

A Pixie kit ($10, crystal controlled CW radio) has a very poor receiver - maybe 100 uV sensitivity. That makes life tough. And the receiver bandwidth of a Pixie kit is as wide as a barn door.

Better QRP radios are in the 5 to 10 uV range. The best QRP radios are about as good as a typical 100 W shack receiver.

Remember that with HF, it's not always about how sensitive the receiver is. Especially on the longer wavelength bands, the noise level can be very high.

Only the signal above the noise counts. With a CW radio, if you can hear the noise, the receiver is probably sensitive enough.

Antennas

It always seems to get back to antennas. Bad antennas are... bad.

The best 20 M field antenna I have is a 17' collapsible mast. I run it on a ground stake. That's about 1/4 wave on 20 meters. I have one of these with an adjustable loading coil at the bottom, and it works fairly well on 40 M as well.

The quickest antenna to deploy is a hamstick on a ground mount. These can be pre-tuned and you are up and running in 30 seconds. How bad the hamstick performs is a function of how short the hamstick is relative to a 1/4 wave antenna. On 20 M, a 6' hamstick will be down about 4 dB from a 1/4 wave antenna.

A hamstick on a car is a directional antenna, and will have some directional gain.

Challenges

Running 5 W instead of 100 W is already tying your hands behind your back. So, I don't feel much worse when using a 6', 20 M hamstick for convenience. With QRP, things are already bad.

I can set up a radio, a key, and a pre-tuned hamstick on a ground mount in 5 minutes.

I'm sure that you have been to Field Day, when hams take all morning to set up... pulling coils of RG8 coax out of plastic tubs... I watched one club erect a 40' crank up tower in the field. Whatever floats your boat, but you'd better have several hours to tear down, and I hope that the WX is good. Or, like, I hope that you don't get sucked up in a tornado and end up in Oz asking the wizard for a new Begali key.

It's all relative. You don't go to the park with a 5 W radio expecting to log that IOTA station in the Indian Ocean.

And, if you do get that IOTA station... theoretically possible if the free electrons in the ionosphere all line up for you... it's a really big deal.

I logged Germany from the park a couple of weeks ago... using a 5 W radio and a ground mount hamstick. Made my day. I'm still bragging about it. Say, did I tell you that I logged Germany from the park with a QRP radio and a hamstick?

Out of the House

Most of the time, running a radio in the park is not strictly about the radio. It's about getting out of the house, and into the sunshine and the fresh air. When I operate portable, other hams show up just to watch. Oh, they have radios, and antennas... but it's a pain to set up... and all they really wanted to do was to get out of the house. And why not?

This gets back to "How fast can you set up?" In other words, if your main goal is to get out of the house, how much extra effort does it take to set up? Otherwise, just go out there, eat donuts, and drink coffee. You know... like a normal person.

I'm Getting Old

Actually, it's worse than that. I AM old.

Will I have a ham radio life if I end up in an assisted living apartment somewhere?

If I have a simple, light "go box", the answer is "yes".

Life is Too Short for QRO

The above argument makes the case for "Life is Too Short for QRO".

Whatever you do... get out there and have fun. That's what amateur radio is about. If you have a 3/4 ton truck, and want to drag a trailer with a generator and a 40' crank up tower out to the park, do it. Me, I'm a man of lesser means... and lower expectations. I've got my little Igloo cooler, and the batteries are charged. If the WX is nice, I'm outta here.

See you on the low end of the HF bands... 72s◆

Q-Codes for Christmas (and other jargon)

QTH	Location (your house)
WX	Weather
QRP	Reduced Power
IOTA	Islands on the Air
QRO	Increase Power
CW	Morse Code/Carrier Wave
73	My Compliments
72	73 on Low Power

(and some from elsewhere)

QRZ	Who Are You/I Am ...
QSY	Change Frequency to ...
QRM	Man-made Interference
QRN	Atmospheric Noise
QRX	Stand by
QRV	I am Ready
QSL	Understand?/Understood
QST	All Stations

RADIO QUEST

TECHNICIAN LEVEL

	Found an Elmer(someone to answer how-to questions)
	Listened on a frequency before talking
	Used your call sign on your handy talkie(HT)
	Spoke to another person on a regular (simplex) frequency)
	Spoke on club repeater
	Sent an APRS update
	Logged in on QRZ.com and created a logbook
	Made a contact via satellite/ISS on an HT
	Got my grid location
	Gave a signal report
	Send a CW/Morse code CQ
	Attended a ham club meeting
	Joined the ARRL
	Checked-in on a club info net
	Asked a question on a net or a club meeting
	Joined breakfast Eyeball QSO on Saturday
	Passed a license exam
	Signed up for EchoLink
	Bought a cheap Chinese radio
	Bought an expensive Japanese radio
	Built a radio
	Built a j-pole/2m antenna
	Made a balun
	Made an RF choke
	Made a go-bag/go-box
	Went on a POTA expedition
	Asked a new contact what radio/ antenna they were using
	Was asked what radio/antenna you are using
	Served as a net control operator
	Join the ARRL

CHECK ALL THAT YOU HAVE COMPLETED. HAVE YOU FULFILLED THIS MONTH'S QUEST?

DO YOU HAVE SUGGESTIONS FOR NEXT MONTH'S RADIOQUEST?
LET ME KNOW HOW YOU DID. POST SCREENCAPS ON FACEBOOK FOR BRAGGING RIGHTS!

newslettereditor@sachseradio.org

HUGO GERNSBACK

Part Three - Radio Stations and Patents

By KG5WHQ

In 1925, Hugo Gernsback founded the radio station WRNY, broadcasting from the Roosevelt Hotel's 18th floor. Not one to retire from a good acheivement, in 1928, WRNY aired some of the first television broadcasts.

Gernsback held 80 patents by the time he passed in New York City on August 19, 1967. The first patent he secured was for a new method for manufacturing dry cell batteries, a patent applied for on June 28, 1906, and granted the following year February 5, 1907.

One of his inventions was an electric hair brush and comb (U.S. patent 1,016,138). Other unique inventions include: an ear cushion (U.S. patent 1,514,152) in 1927; and a hydraulic fishery (U.S. patent 2,718,083), in 1955.

Gernsback published *Music for the Deaf* in The Electrical Experimenter describing the Physiophone, a device which converted audio into electrical impulses that could be interpreted by humans. He advocated for this device to allow the deaf to experience music.

He held further patents for: Incandescent Lamp, Electrorheostat Regulator, Electro Adjustable Condenser, Detectorium, Relay, **Potentiometer**, Electrolytic Interrupter, Rotary Variable Condenser, Luminous Electric Mirror, Transmitter, Postal Card, Telephone Headband, Electromagnetic Sounding Device, Submersible Amusement Device, The Isolator, Apparatus for Landing Flying Machines, Tuned Telephone Receiver, Electric Valve, Detector, Acoustic Apparatus, Electrically Operated Fountain, Cord Terminal, Coil Mounting, Radio Horn, Variable Condenser, Switch, Telephone Receiver, Crystal Detector, Process for Mounting Inductances, Depilator, Code Learner's Instrument.

Gernsback was a cunning businessman in the sense that he published Radio News and cross-promoted the magazine

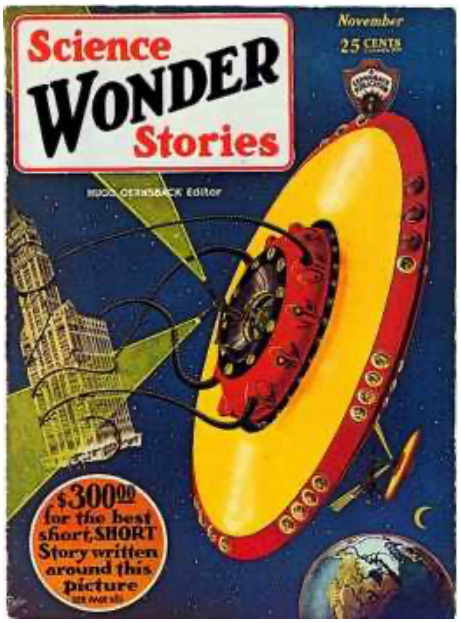
and the radio station WRNY. He also advocated for future directions in innovation of radio amateurism. The magazine contained many drawings and diagrams, encouraging radio listeners of the 1920s to experiment themselves to improve the technology. WRNY was effectively his laboratory to see if various radio inventions were worthwhile.

Articles that were published about television were also tested in this manner when the radio station was used to send pictures to experimental television receivers in August 1928.

This is where his cunning wore thin. Experimental television technology, however, required sending sight and sound one after the other. Modern, accepted methods obviously send both at the same time. Such experiments were expensive, eventually bankrupting Gernsback's Experimenter Publishing Company in 1929. WRNY was sold to Aviation Radio, who maintained the channel part-time to broadcast aviation weather and related programs. Along with other stations sharing the same frequency, it was acquired by Metro-Goldwyn-Mayer and consolidated into that company's WHN in 1934.

The WRNY callsign is now owned by Galaxy Communications operating out of Utica and Rome, NY. WRNY is affiliated with ESPN, Westwood One, and New York Giants Radio.

Gernsback's cunning was crippled by his shortsightedness in financial liquidity. Where he cherished the use of credit and ran a bleeding if parsimonious acccounts payable regime. His emplyees in his print companies



were treated abusively and he held payment as long as possible. Gernsback even went so far as to hold funds until forced to pay through the courts.

He offered payment as low as ¼ cent per word for stories. He could get away with this because Amazing Stories was the only game in town in the beginning. But slow payment cost him contributions from several noted writers, among them H.P. Lovecraft and Robert E. Howard.

That's not to say Gernsback was flawed beyond reprieve. It is fair to state Gernsback did not see radio as a male-only activity. Radio and electronics in general owe a lot to the strides he and his peers made. In 2004, Gernsback's native Luxembourg honored him with a commemorative postage stamp.

Source: Michael A. Banks account of the life of the amazing Hugo Gernsback.◆

How many Radio Quest boxes have you checked?

RADIO QUEST

GENERAL LEVEL

	Tuned up your first HF frequency
	Made a DX contact(out of the continental US)
	Joined a traffic net
	Sent a radiogram
	Worked a Field Day contact
	Participated in a contest
	Used a digital mode
	Sent an email over the radio
	Connected your radio to the computer/internet
	Used a SWR meter
	Grounded your station
	Grounded your antenna
	Applied a lightning arrestor
	Drove a ground rod
	Computed RF emissions for your station
	Ran your station on a battery
	Powered your station from a car power supply
	Created your first scratch paper log
	Installed logging software(such as hamrs/n1mm)
	Logged on to LOTW
	Used a pi*star
	Used a Watt meter
	Made a counterpoise
	Threw a wire up in a tree for an antenna
	Know who Dave Cassler is
	Have given a Roger Roger (RR)
	Stood on a ladder and wondered *"Will it antenna?"*
	Joined RACES
	Listened to a weather net

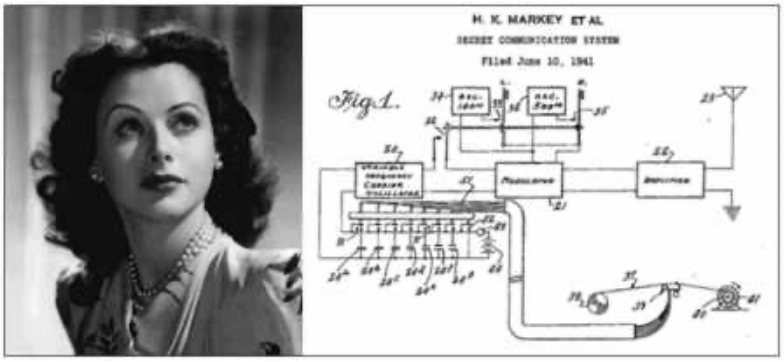
CHECK ALL THAT YOU HAVE COMPLETED. HAVE YOU FULFILLED THIS MONTH'S QUEST?

DO YOU HAVE SUGGESTIONS FOR NEXT MONTH'S RADIOQUEST?
LET ME KNOW HOW YOU DID. POST SCREENCAPS ON FACEBOOK FOR BRAGGING RIGHTS!

newslettereditor@sachseradio.org

WHO IS HEDY LAMAR

By KG5WHQ



Hedy Lamarr, already a well-known Austrian-born American actress, became known for her earliest inventions including an improved traffic stoplight and a tablet that would dissolve in water to create a carbonated drink. Although the beverage was unsuccessful, she later recalled that it tasted like Alka-Seltzer.

After fleeing the Nazis, she appeared in the film Algiers in 1938 and later appeared in Boom Town starring with Clark Gable and Spencer Tracy. Hedy appeared in 30 films in 28 years and appeared opposite many of the greats in film.

As World War II began, Lamarr was inspired to contribute to the war effort. She designed a jam-proof radio guidance system for torpedoes, a project she undertook with the help of composer George Antheil. They drafted designs for a new frequency-hopping, spread-spectrum technology that they later patented.

Lamarr and Antheil realized that radio-controlled torpedoes could easily be jammed, causing the torpedo to go off course. Using her knowledge about torpedoes from her first husband and a method similar to piano rolls, they designed a frequency-hopping system that would continually change the radio signals sent to the torpedo.

Their invention was granted a patent on August 11, 1942, under Lamarr's married name Hedy Kiesler Markey. However, the U.S. Navy was not receptive to considering inventions from outside the military at that time, making it difficult to implement their design.

UNITED STATES PATENT OFFICE

SECRET COMMUNICATION SYSTEM

Hedy Kiesler Markey, Los Angeles, and George Antheil, Manhattan Beach, Calif.

Application June 10, 1941, Serial No. 397,412

4 Claims. (Cl. 178—41)

Lamarr became a naturalized citizen of the United States at age 38 on 10 April 1953.

It wasn't until 1962, during the Cuban missile crisis, that an updated version of their design appeared on Navy ships. This design is now recognized as one of the key elements behind modern spread-spectrum communication technologies, including CDMA, Wi-Fi networks, and Bluetooth technology.

Lamarr's contributions to technology were later recognized with the Electronic Frontier Foundation Pioneer Award and the Bulbie Gnass Spirit of Achievement Bronze Award in 1997. She also gained recognition through features on the Science Channel and the Discovery

Channel.

In 2014, Lamarr and Antheil were posthumously inducted into the National Inventors Hall of Fame.

Hedey Lamarr Day is an annual event celebrated by radio amateurs in the United States, and N9H is the special event call sign used for this occasion on November 9. The event aims to recognize Lamarr's contributions to the development of modern wireless communication technologies, including Wi-Fi and Bluetooth.

Sources: QRZ.com, N9H; Wikipedia.◆

Your

white paper about coaxial skin effect could appear here.

"When the mic is broken."

New Here?

Getting on the Club Repeater

If this is your first time signing on to a 2m UFH or VHF repeater, this is how you do it.

Assuming you are on a handheld HT get your manual or niftyguide out as all radio brands or models have different menu systems. For that matter, they rarely have the same words on the buttons.

1. Switch to VFO mode. This lets you enter a frequency as opposed to choosing a memory channel.
2. Punch in 440.350 MHz. On my Chinese junk radio, I key in 440350 as there is no decimal. My overprice Japanese radio only has a tuning knob which means I have to scroll each digit with the knob and cursor to the left.
3. Choose the shift setting and set it to "+" plus.
4. Set the PL tone to 110.9. Sorry, every radio does this in the hardest way they can find but when you see the option, your radio will help you choose the right value. Maybe.
5. Check that you are truly in FM mode, not digital.
6. Hit the PTT (Push-to-talk) button and listen for the beep. If you get a beep back from the repeater you did everything right. Save to a memory channel.

Greg Kent KK6AXF slaves over the hardware for us. Be sure to take a moment and thank him and our repeater trustee **John Smyder W5JWS**—they're always listening. They have no life.◆

December

Sunday 1	Monday 2	Tuesday 3
1p Military Veterans D-Star Net @ REF026A **2p** DARC (Dallas) Meeting on the Air @ W5FC (146.880 PL 110.9) **7p** Intl D-Star Net @ REF001C **8p** K5TIT D-Star Net @ REF33B **9p** Collin County ARES @ WD5ERD (147.18 PL 107.2)	**7p SARA Weekly Information Net @W5SRA** **7p** GARC (Garland) Club Meeting **7:30p** RWK–Meeting on the Air @ 147.12 PL 110.9	**7p** DARC (Dallas) General Meeting **7p** HAM (Mesquite) InfoNet @ WJ5J (145.310 PL 110.9) **7:30p** Ark-La-Tex D-Star Net @ REF048B **8p** Texas D-Star Net @ REF004B ARS Spartan Sprint(CW)
8 **1p** Military Veterans D-Star Net @ REF026A **7p** DARC (Dallas) Meeting on the Air **7p** Intl D-Star Net @ REF001C **8p Sachse RACES Public Service Net @ W5SRA** **8p** K5TIT D-Star Net @ REF33B QRP ARCI Holiday Spirits Sprint(CW)	**9** **7p SARA Weekly Information Net @W5SRA** **7:30p** Texas ARES Net @ 3.873 MHz 4 States QRP Group Second Sunday Sprint(CW,Ph)	**10** **7p** HAM (Mesquite) InfoNet @ WJ5J (145.310 PL 110.9) **7:30p** Ark-La-Tex D-Star Net @ REF048B **8p** Texas D-Star Net @ REF004B Worldwide Sideband Activity Contest(Ph)
15 **1p** Military Veterans D-Star Net @ REF026A **2p** Texas RACES Net (HF) @ 7.255MHz **7p** Intl D-Star Net @ REF001C **8p** K5TIT D-Star Net @ REF33B **9p** Collin County ARES Training Net @ W5MRC(146.75, PL 110.9) Run for the Bacon QRP Contest(CW)	**16** **7p SARA Weekly Information Net @W5SRA** **7:30p** Texas ARES Net @ 3.873 MHz	**17** **7p** HAM (Mesquite) InfoNet @ WJ5J (145.310 PL 110.9) **7:30p** Ark-La-Tex D-Star Net @ REF048B **8p** Texas D-Star Net @ REF004B Worldwide Sideband Activity Contest(Ph)
22 **1p** Military Veterans D-Star Net @ REF026A **2p** Texas RACES Net (HF) @ 7.255MHz **7p** Intl D-Star Net @ REF001C **8p** K5TIT D-Star Net @ REF33B **8p Sachse RACES Public Service Net @ W5SRA** ARRL Rookie Roundup, (CW)	**23** **7p SARA Weekly Information Net @W5SRA** **7p** DARC (Dallas) Geek Net @ W5FC **7p** GARC (Garland) Club Meeting **7:30p** Texas ARES Net @ 3.873 MHz **8p** American Legion Post 315 Radio Club Net @ W5SRA	**24** **7p** HAM (Mesquite) InfoNet @ WJ5J (145.310 PL 110.9) **7:30p** Ark-La-Tex D-Star Net @ REF048B **8p** Texas D-Star Net @ REF004B ARRL Rookie Roundup (CW)
29 **1p** Military Veterans D-Star Net @ REF026A **7p** Intl D-Star Net @ REF001C **8p** K5TIT D-Star Net @ REF33B **8p Sachse RACES Public Service Net**	**30** **7p SARA Weekly Information Net @W5SRA** **7p** DARC (Dallas) Geek Net @ W5FC **7p** GARC (Garland) Club Meeting **7:30p** Texas ARES Net @ 3.873 MHz YOTA Contest(CW,Ph) QCX Challenge(CW)	**31** **7p** HAM (Mesquite) InfoNet @ WJ5J (145.310 PL 110.9) **7:30p** Ark-La-Tex D-Star Net @ REF048B **8p** Texas D-Star Net @ REF004B Worldwide Sideband Activity Contes(Ph) QCX Challenge(CW) Bogor Old and New Contest(Ph)

CLUB CALENDAR

December

Wednesday 4	Thursday 5	Friday 6	Saturday 7
6:50p NTx Readiness QST Net @ 7.27750 MHz LSB *7p VHF-UHF FT8 Activity Contest*	**11a** GARC (Garland) Crony Lunch @ Judy's Cafe **7p** HAM (Mesquite) Monthly Meeting **8p** GARC (Garland) InfoNet *QRP ARCI Topband Sprint* *Walk for the Bacon QRP Contest*	*7p Skywarn Recognition Day* *ARRL 160-Meter Contest*	**7:30a QSO Breakfast@Ballard St. Cafe** **12p** Garland "Hands-On" Gathering **6:30p SARA (Sachse) Club Meeting** **7p** DARC (Dallas) Tech Net **9p** Saturday Night D-STAR Net@REF029A *Skywarn Recognition Day(ends at 7p)*
11 **6:50p** NTx Readiness QST Net @ 7.27750 MHz LSB **8:30p** NTx ARES Net @ 3860 *NAQCC CW Sprint(CW)* *Phone Weekly Test(Ph)* *VHF-UHF FT8 Activity Contest(D)*	**12** **11a** GARC (Garland) Crony Lunch @ Judy's Cafe **8p** GARC (Garland) InfoNet	**13**	**14** **7:30a QSO Breakfast @ Ballard St. Cafe** **9a** W5YI VE Test Session @ Wylie **7p** DARC (Dallas) Tech Net **9p** Saturday Night D-STAR Net@REF029A *ARRL 10-Meter Contest (CW, Ph)* *PODXS 070 Club Triple Play Low Band Sprint(D)*
18 **6:50p** NTx Readiness QST Net @ 7.27750 MHz LSB **7p** Murphy CERT Net @W5SRA **8:30p** NTx ARES Net @ 3860 *NAQCC CW Sprint(CW)* *Phone Weekly Test(Ph)* *VHF-UHF FT8 Activity Contest(CW)*	**19** **11a** GARC (Garland) Crony Lunch @ Judy's Cafe **8p** GARC (Garland) InfoNet *Walk for the Bacon QRP Contest(CW)* *NTC QSO Party(CW)*	*AGB-Party Contest(CW,Ph,D)* **20**	**21** **7:30a QSO Breakfast @ Ballard St. Cafe** **9a W5SRA Laurel VE Test Session** **9a** GARC (Garland) ECC Open House **7p** DARC (Dallas) Tech Net **9p** Saturday Night D-STAR Net@REF029A Feld Hell Sprint(D) OK DX RTTY Contest(D) Croatian DX Contest(CW,Ph)
25 **6:50p** NTx Readiness QST Net @ 7.27750 MHz LSB SKCC Sprint(CW) Phone Weekly Test(Ph)	**26** **11a** GARC (Garland) Crony Lunch @ Judy's Cafe **7p SARA Board of Directors Meeting** **8p** GARC (Garland) InfoNet DARC Christmas Contest(CW,Ph)	**27**	**28** **7:30a QSO Breakfast @ Ballard St. Cafe** **7p** DARC (Dallas) Tech Net **9p** Saturday Night D-STAR Net@REF029A RAC Winter Contest(CW,Ph) Stew Perry Topband Challenge(CW) Original QRP Contest(CW,Ph)
1 **6:50p** NTx Readiness QST Net @ 7.27750 MHz LSB	**2** **11a** GARC (Garland) Crony Lunch @ Judy's Cafe **7p** HAM (Mesquite) Monthly Meeting **8p** GARC (Garland) InfoNet	**3**	**4** **7:30a QSO Breakfast @ Ballard St. Cafe** **12p** Garland "Hands-On" Gathering **7p** DARC (Dallas) Tech Net **9p** Saturday Night D-STAR Net@REF029A

MAKE A DEATH RAY

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CHRISTMAS PARTY: December 7, 6:30pm
NEXT MEETING: January 9, 7:30pm

Do your young folk enjoy the comics in this section of SkyWaves? They might just learn something...

Don't blame me if they do!

SARA Skywaves

Is published each month for the purpose of informing Sachse Amateur Radio Association members of current events and issues of interest to amateur radio operators. Articles and suggestions are always welcome. Articles that appear in this publication may be reproduced provided credit is given to SARA Skywaves and to the original source.
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SHOVEL AND LIME

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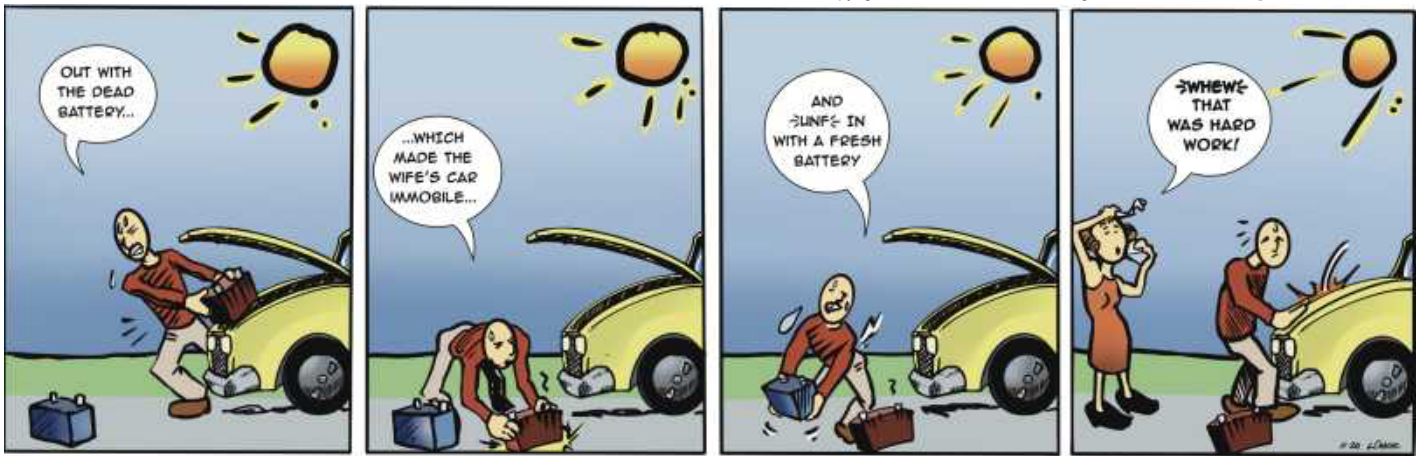

MIKE CALL

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Do you know the answers to these exam questions?

1.In the United States, what circuit does black wire insulation indicate in a three-wire 120 V cable?
A. Neutral
B. Hot
C. Equipment ground
D. Black insulation is never used

2.How can you determine that your station complies with FCC RF exposure regulations?
A. By calculation based on FCC OET Bulletin 65
B. By calculation based on computer modeling
C. By measurement of field strength using calibrated equipment
D. All these choices are correct

3.What hazard is created by operating at microwave frequencies?
A. Microwaves are ionizing radiation
B. The high gain antennas commonly used can result in high exposure levels
C. Microwaves are in the frequency range where wave velocity is higher
D. The extremely high frequency energy can damage the joints of antenna structures

4.What is a good way to guard against electrical shock at your station?
A. Use three-wire cords and plugs for all AC powered equipment
B. Connect all AC powered station equipment to a common safety ground
C. Install mechanical interlocks in high-voltage circuits
D. All these choices are correct

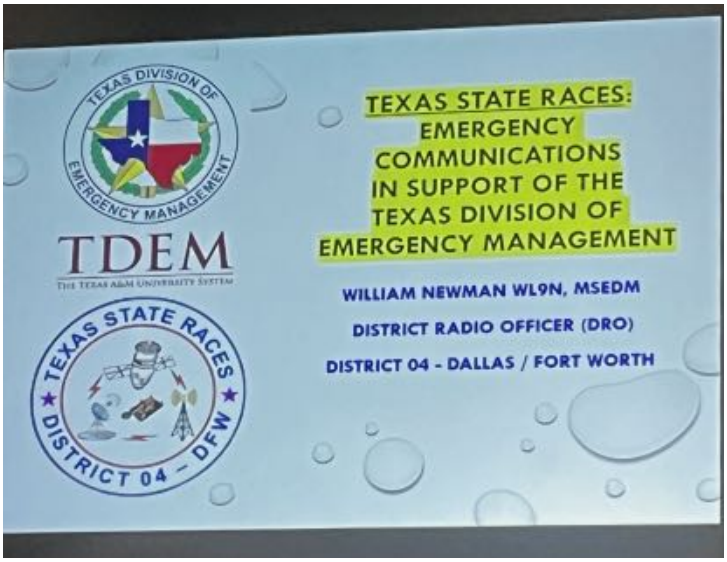
5.What is the effect of modulation duty cycle on RF exposure?
A. A lower duty cycle permits greater power levels to be transmitted
B. A higher duty cycle permits greater power levels to be transmitted
C. Low duty cycle transmitters are exempt from RF exposure evaluation requirements
D. High duty cycle transmitters are exempt from RF exposure requirements

Answers: 5.A,4.D, 3.C, 2.A, 1.B

ACTION PHOTOS

Andy Barnes, W5KZJ at the November general meeting

The people ofd SARA



An introduction to Texas State RACES

William Newman WL9N, RACES DRO

Put a choke hold on a problem...

We really do more than eat. I can't prove it, but I claim it!

ACTION PHOTOS

Andy Barnes W5KZJ and his YL Lisa Barnes KG5OBK activating Pilot Knob park, US 8308

Should you ever desire to get experience running a net, here is an easy to follow script to aid you along. Volunteer at the club meeting—we want you here!

Sachse Amateur Radio Association Weekly Information Net Script

Created by Andy, W5KZJ March 01, 2023

Preamble

Good evening all Radio Amateurs and welcome. This is Your Call, my name is Your Name, and I will be your Net Control Station for this session of Ham Radio in Sachse Weekly Information Net. This net meets every Monday night at 7:00 PM local time, on the W5SRA repeater, frequency 440.350, with an offset of +5, and using a PL tone of 110.9, for the purpose of discussing topics of interest to SARA members and others. (pause) This is a Directed Net. Please do not transmit unless directed to do so by Net Control. If the repeater should go down, everyone should switch to the Sachse emergency simplex frequency 146.400.

Also, if at any time, you have an emergency that is an imminent threat to life or property, break in by saying *"Priority"*, *"Emergency", or "Break Break"* followed by your call sign, and the net will recognize your station and will stand by.

(Pause)

A reminder Net Control Should ID. every 10 minutes.

Check-Ins

As we start check-ins this evening, we will break it down into a couple of categories.

1. Portable, mobile and short time check-ins.
2. General Check-ins

We will stand-by for portable, mobile and short time check-ins. Please, come now with your phonetic call sign, followed by your name.

(Recognize short time, portable and mobile check-ins individually.)
(Go through the list and allow each station to make any comments that they might have.) (ASK for any additional check-ins.)

We will now standby for general check-ins. Please, check in now with your phonetic call sign, followed by your name.

(Go through the list and allow each station to make any comments that they might have. Then ask for more check-ins – this might need to be done 2 or 3 or more times – until there are no more check-ins.

(Make sure you give your own call-sign regularly and allow others to ID appropriately as well.)
(ASK for any additional check-ins.)

Club Announcements:
Our first topic will be announcements from club officers. Any club officer on the net with an announcement, please give us your call sign.

At this time, we will take stations with announcements of interest to the amateur radio community in general. ***(When Ham Operators check-in initially, they may tell you if they have an announcement for later in the Net. Make note of those who have announcements and recognize them first.)***

SARA meets for breakfast every Saturday morning at 7:30AM at Ballard Street Cafe, 112 N. Ballard St in downtown Wylie. People begin showing up around 7 with most showing up by 7:30AM.

TECH CORNER and SWAP NET

Is there anyone who would like to ask a technical question, **or** share information on something they would like to buy or sell**? Remember no haggling over price.** Please come now with your call sign.

Wrap-Up

This is (your name and call). We wish to thank all who participated in the net this evening. This net will meet again next Monday night at 7:00 PM local time on the W5SRA Repeater. Sachse Amateur Radio Association meets the second Thursday at 7:30PM at North Point Church of Christ, 7030 Hwy 78, Sachse , TX. The Sachse Amateur Radio Association Board of Directors meets the fourth Thursday at 7:00PM on Google Meet, a link is in the club calendar.

Late Check-Ins
Before we end this Net, I would like to take late check-ins. If there are any late check-ins, please give your call sign and name slowly and clearly. (*Write down and read back each call sign*).

Wrap-Up:
This concludes the “Ham Radio in Sachse " Weekly Information Net. If you would like more information about the Sachse Amateur Radio Association, please visit our web site at www.sachseradio.org. This is (*name and call sign*) and we now return the W5SRA repeater to its normal use. Hope to hear from you next week.

LAVALLÈRE TRIMMED OF GOLD

Part One of a Two Part Story

By Lonnie Webb KG5WHQ

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Dan Lamb cut the fuel to his acetylene blow torch, letting the orange glow around the steel pipe cool and darken. Visually, he inspected the glow around the joint. Meeting with a happy judgment, he lifted his goggles and wiped his forehead. Exhaust pipe bending and welding were far from his chosen occupation.

"End of the month paychecks just arrived," said Ed. Dan considered him to be something of a foreman in the shop. His fingers were gnarled with age and arthritis, which made his hands suitable for walking paper around the company. "You're new here, aren't you?"

"Yeah, Ed." said Dan with a smile. This was his first pay period to be promoted to the regular paycheck run. "Came here a couple of weeks back after the factory on the other side of town closed down. When my garage was swept away by the storm that claimed my buddy Thibedeaux Ray, I had to find something new."

"Heard about that," said Ed. "You think he's gone, huh?"

"The tow truck had been recovered, but Tibedeaux was not found. They teach us in CERT to work in pairs—I made a bad mistake letting him go off by himself," Dan shrugged, securing the blow torch. "The rest of the Skywarn boys and the folks over at CERT reminded me we have to face facts, Ed. You know, be a realist."

"Ah, dude... This ain't cool," said Ed. He held up the stack with a shaken expression. "I hate to do this to you. Lots of these in the pile. And I thought they would pass you over for this."

Dan took an envelope from the older man. It had a pink insert in the address window.

"Damn," blurted Dan as he realized had just lost his new job. "RIF-meated?"

"Re-duction in force," scoffed Ed. "Yeah, the economy is worse than I had thought, I guess. I am getting one next paycheck—I'm not supposed to know that. They say it will get better for Christmas."

Dan's stomach lurched. It knew the math for the rent payment that had gone up.

His mind was stuck there, driving home from the shop. The traffic slowing him down didn't bother Dan. He watched the red sky darken much earlier today. The sun was absent. Orange traffic cones intruded into the streets where utility work was still being done to fix storm damage. It seemed that dumpsters were at every house. Roofs were still covered with blue tarps. Mailboxes stood at angles. That storm touched his life, but it took lives directly from so many more.

At home, he parked his truck in the driveway and decided to face the music again. Dan drew air into his chest, intent on holding it, and walked with false purpose into his wife's kitchen. It was a small utilitarian butler's kitchen with brassy furnishings and a simple table. Sandra had decorated with fall pumpkins the same as every year. It was a place of comfort. The kids climbed past his very pregnant and yet beautiful wife to paw against him like starving puppies.

"Dad, can I have a new phone for Christmas?" said 9-year-old Lou Anne.

"You have one," he said while going through the mail, tossing any junk mail.

"But it is a year old," now hopping with her whiny eyes.

"We'll see," said Dan as he switched into brush-off mode.

"Can I have an iPad for Christmas?" demanded the truly whining voice of the 8-year-old Leo.

He had a mildly realistic need with a true learning disorder. "We'll see if there is a program through the school, first."

That was. pretty good, Dan thought to himself. I am getting better at this misdirection. Always honest. The truth will set you free, won't it?

"I can see the look in your eyes," said Dan's wife, the lovely Sandra, surrounded by the aura of pregnancy, cut through the misdirection. She nervously tugged at her necklace, a priceless heirloom that never left her. In contrast to the peaceful beauty, an accusing note of anger came with the pronunciation. "A pink slip? Better not be. The rent is up."

"So is power, water, gas—all have gone up," he added quietly, holding up a bill for each. He didn't want to worry the kids so he kept his tone down.

She said, "What are you going

to do about it?" An unspoken This-is-your-fault hung over him.

Dan's heart was in his neck. He tried to stifle the pulsing in his neck while trying to suck in a breath. Was it anger or terror?

Then he sighed and acted happy, setting aside his internal conflict and fear. Now, he thought, I must make her feel assured, balanced with truth.

I'm going to die.

"This time of year, companies are slowing down hiring. Instead, I'll sell everything I can sell. That should buy us a month or two."

"Food service chains are offering a lot of entry-level pay," she suggested.

"Entry level?" Dan felt knocked off a ladder. "The hours are low. I know I haven't got a master's like you but I'm not unskilled..."

"Well, you have to come up with something. I can't work right now."

"I do know that. I'll... think of something," whispered Dan as he stood and walked outside. A for-sale sign was still glued on his motorcycle. A neighbor was waiting until payday to pick it up.

"I...have to be the shock absorber..." Dan muttered inwardly, only for himself to hear. He could handle battling a hurricane so much easier than facing the let-down look on his wife's face.

Dan moved the for-sale sign to his boat. The boat still smelled of marine cleaner and wax. It would pass for nearly new the way he kept it. "That'll buy me a month's rent."

He walked under the cloak of the grey evening. Dan looked up at the neighborhood trees snapped off three-quarters of the way up. The dangling treetops dangled down and browned. All they could do was hang on until someone cut them away, waiting to be cleaned up by the municipal services.

That's a thought, he said to himself. Surely, the tree cutters need some manpower. But do they pay a rate that will beat the rate of keeping the house and heating it?

He walked to his shed, which housed his finer radio and electronics tools. Dan opened a drawer and retrieved his cherished Kenwood HT. He passed his hand over the hand-sized radio. Even used, these command $400 if the battery is healthy, he thought.

"I was wanting to get another one of these this year to make his and hers pair for camping trips," he said sadly to no one who might as well have been Sandra standing there. With an extra child, the use of the adventure frequency could be at an end.

He then turned to his imaginary kids standing beside her. He felt great shame and anguish. "They'll never understand what this does to a man's guts. Well, not at their ages."

Clenching his face momentarily in his hands, Dan scrubbed the mop on his head. "The kids don't understand where the money comes from. The wife only paints with one brush on her canvas. The hurt brush. It can be a noun or a verb."

Dan reached for his disconnected Morse Code key. He silently tapped: love, joy, peace.

"I...have to be the shock absorber..." Dan repeated on the key: Tap-press-tap-tap, press-press-press, tap-tap-tap-press, tap. Tap-press-press-press, press-press-press, press-tap-press-press. Tap-press-press-tap, tap, tap-press, press-tap-press-tap, press.

Morse like many skills fades if not used.

"Use it or lose it," he thought.

He then worked numbers in his head and assured himself he could get by for a maximum of two months. But even with Clown Burger hours, if he could get them, he would be flat broke in less than three months.

Dan tuned up his radio and found the Tailgater's net on HF. He pressed the PTT button but his heart wasn't in it. Missing the words, he let the button go.

The gray night melted into a gray morning. Dan left the house before the family rose to meet Gary, an older friend from the factory. They routinely grabbed quick-stop coffee on Saturdays. This was a dry fall Saturday, too. The air was full of the sounds of wood chippers grinding away at fallen wood. Odors of cedar and cypress dominated the town.

The cinder block quick stop was an old gas station renovated into a corner store with walnut paneled seating inside. It boasted only one arcade game in a corner, with a couple of kids playing on it, and a fancy ATM.

Gary was there. An older man with calloused hands. He had been a machinist through several wars. Dan learned to turn a lathe at Gary's instruction.

"Hey, Gary, how are you doing?" asked Dan as he shook

hands with the salt and pepper-haired man.

"Better than I should, I expect," answered Gary.

"Did you get on at the pipe mill?"

"Sure did. That was the hardest job I ever chased. So many interviews! It took me six weeks. Just to run an extruder at that."

Hm, thought Dan. That could be a hurdle. Six weeks of interviews could put me, and the wife, on the edge. "Are there still jobs to be had? I could use work since my garage was blown away."

"No, man. They are going into shutdown this month. You should apply for FEMA money since the storm flattened your garage."

"I applied," the frustrated mechanic grumbled. "You know what they sent me? Less than a grand. How do you rent a front-end loader with that? Insurance is dragging their feet. And it's not like the weekend mechanic work is backing up. The storm didn't leave cars behind to fix. They're floating by Puerto Rico now!"

Dan added "FEMA stands for —"

"Nay! They's chitlins about." They both laughed. Dan had to reel in the frustration he felt. He hadn't realized how many feelings he was avoiding.

"Would you be open to off-shore welding?" asked Gary. "It's dangerous. A man falls out there and he's jes' gone."

Dan blew out a thought about safety and risk without listening to it. "If the money's right. Is this a team run with you? I can trust you won't get me killed."

"That's what I'm thinking," Gary said. "A team of two men can be sold easy enough. I'll keep an eye out for you. If I hear anything, you come running, okay?"

"Tell me, Gary, when people get riled up on the repeater how do you avoid getting caught up in the back and forth when the lids take on the grumps. Why don't you bite back at people?"

"Biting over the air. Interesting imagery," said Gary. "That perty wife of yours showing those momma bear teeth over the job loss? Pregnancy ain't nice to the men, either."

Dan shrugged silently. Gary rolled his words around in his head, clearly trying them on until something fit.

"The shouty things people do... It's like an injured animal. When you try to help they snap at you. They aren't meaning to attack but it's to keep you from hurting them. With people, it's them crying out with a social or emotional injury but not being able to speak the words. They can't articulate they's words to talk about what's eatin' 'em."

"You don't know why they are blowing and going," nodded Dan.

"Zacktly." Dan took a drink. "You have to let that river run dry on its own. Don't matter if it's radio or marriage, Dan. Just keep the peace. Even if that means being a shock absorber."

"Oh, that reverberates with me. What else can you do?"

"Not much but here's another thought before you try to fix everybody's troubles. What if the troubles we all have are... supposed...to happen? To develop us. If the pain don't happen, neither does the benefit."

"Like the pain of benching that first 200 pounds?"

"Zacktly..." the older man took a long drink from his styrofoam cup.

"Not to change the subject, but I'm thinking about selling my boat. I need to take it out and get it run-in so I know it will stand up to showing it. Would you go out with me today—just to see what stands out to you?"

"Well...I'd love to buy that boat," Gary almost whispered to him.

"Would Charlene be good with that?" said Dan.

"No... Call it a fishing trip..."

"Great," said Dan with an extended thumb. "Better than I hoped. Let's take it out on the tributary."

Some time later, they put out in the boat at the ramp not far from Dan's house. Cypress trees lined the banks of the river. It wasn't too swampy but gators peeked up as they motored by.

"It's not a swamp boat, but it will do well for fishing and pulling a skier," said Dan.

"Boat handles nice," chuckled Gary. "How close to the dam can we get?"

"Not very. Even when the gates open the current is strong but the rocks are bigger than I am willing to face."

"Have you fished Toledo Bend?" asked Gary while he examined the reserve tank.

"Many times."

Dan noticed white ripples in the water. "I'm beginning to think they've opened the spillway up at the reservoir. The water is running fast. Maybe we can get up to the powerhouse today, but I usually stay below the fisheries."

"Hey, look up there. Look at

that billboard at the bridge," Gary covered his eyes, looking up through the overhang of the Spanish moss. There were several billboards along the road. Or rather, there had been. Some of them had been utterly obliterated by the winds and now only hung as wooden boards crisscrossing here and there. Ghostly fabric hung where painted banners had been stretched.

"It's just crumpled, isn't it?"

"All of them are like that out here. The posts stand free, but the signs are gone. But, Dan, that guy up there on the cherry picker. He was working, but now he's waving like crazy. He's extended that basket almost straight up in the air. Is he in trouble?"

Dan looked now. "I believe he's waving a walkie-talkie and shaking his fist. Is he angry at us?"

Dan pressed open a hatch marked "marine supplies," where he kept everything a ranger might ask to see, and took out a pair of binoculars. He focused past the man and then pulled back to sharpen on his hands.

"He's waving 'three,'" said Dan. He thought for a second as his eyes slid over a GMRS radio in the hatch. "Channel three. He wants to talk!"

Gary took the wheel and moved the boat into the center of the increasingly white water.

Dan called into the radio "November Oscar Tango. November Oscar Tango on GMRS station" and gave his GMRS callsign.

"Something bad at the dam!" came the urgent response. Something seemed wrong with the radio. The words were all hissing. "Get into the open!"

Angry bursts of sound charged the air—a siren sounded rapid pulses elsewhere.

"You heard him, make a one-eighty, and let's get to open water ASAP!"

Dan felt queezy. The sound reminded him of the tornado sirens that announced the wrecking of the town.

Gary wasted little time getting the now uncomfortably small ski boat to turn. Pulling and pushing levers, he did a fine job as a junior boat pilot.

"Station, thank you for the warning. Do you have confirmation of dam status?"

The radio turned staticky. Dan repeated the message with "Do you copy?"

"Bad sound," said the audio message in the invisible hail storm of static. "The dam is breaking open. Repeat..." Static overtook the man on the bridge.

"Station, I copy dam breaking... Is the deluge over the top or through the sides?"

Static.

"Repeat, I copy dam breaking... Is the deluge over the top or through the sides?"

Sound like an arc welder buzzed for a while and was then replaced with "repeating... through... the.... front..."

Crap, thought Dan. We can't outrun an on-rush, and a wall of water would crush us!

TO BE CONTINUED◆

Question: How many forms of communication were used in this story?

A whole column for you to talk about your favorite log book....

NEXT MONTH: NEW YEAR ISSUE

AT THE END OF 2024, HAVE YOU ACHIEVED? OR DO YOU KNOW IT ALL?

TELL ME: Email newslettereditor@sachseradio.org

SACHSERADIO.ORG

Sachse Amateur Radio Association

2024 Merry Christmas Ham Radio Wishbook

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HAM RADIO OUTLET SOTA POTA 150.....$299.95*

Portable 5-54 MHZ HF Vertical Antenna CW 100W SSB 150W. The SOTA POTA 150 is a Lightweight Antenna System perfect for Portable Operations. Consisting of only seven parts, the SOTA POTA 150 takes only a few minutes to assemble and disassemble. Light Weight, Wide Frequency Coveraege and Ultra-Portability make this antenna an excellent choice for your next SOTA or POTA adventure!

CLICK https://www.hamradio.com/detail.cfm?pid=H0-018842

ZUM Radio Mini 1.3 OLED ZUMspot Kit...$174.95

High performance 32-bit ARM processor
ZUMspot Board + antenna Fully Assembled And Tested
Supports DMR, P-25, D-Star, System Fusion, NXDN and POCSAG
•Onboard LEDs to show status (Tx, Rx, PTT, Mode)
Up to 10mW RF power •SMA antenna connector, UHF antenna included •Mounted on Raspberry Pi Zero WH
The firmware is pre-loaded on an SD card and is easily upgraded via software. Built-in 1.3" OLED screen

CLICK https://www.hamradio.com/detail.cfm?pid=H0-017832

SDRplay SDRplay RSP1B.....$139.95*

Powerful 14 Bit SDR Receiver/Includes SDR-UNO Software.The SDRplay RSP1B is an Enhanced Version of the popular RSP1A powerful wideband full featured 14-bit SDR which covers the RF spectrum from 1kHz to 2GHz. The RSP1B comes in a Ruggedized Black Painted Steel Case and has Significantly Improved Noise Performance.

All it needs is a computer and an antenna to provide excellent

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YAESU FT-710 FIEL.....$974.95*

HF/50MHz 100W SDR Transceiver

SALE PRICE. Regular price $1,199.95.
TX Frequency Range: (Click below for full description)
1.8MHz band – 50-54 MHz band (Amateur bands only) 70MHz – 70.5MHz (UK Amateur bands only
RX Frequency Range:
30KHz – 75MHz (Operating)
1.8MHz – 29.699999MHz (Specified performance, Amateur bands only)
50MHz – 53.999999MHz (Specified performance, Amateur bands only)

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YAESU FTDX-101MP.....$4,499.95*

HF 6M HF SDR TRANSCEIVER ATU 200 WATTS

SALE PRICE. Regular Price: $5,199.95. Ranked #1 On Sherwood Engineerings Top Performing Receiver List. FTDX101MP - 200W HF/ 50MHz transceiver.Create the future of HF communications with the birth of the FTDX101.

CLICK https://hamradio.com/detail.cfm?pid=71-002985

YAESU FT-70DR.....$174.95*

C4FM/ FM 144/ 430MHz Dual Band 5W HT

SALE PRICE. System Fusion Compatible
FM Friendly Digital Operation with AMS (Automatic Mode Select)"
Sophisticated C4FM Digital Functions : Digital Group Monitor (GM) / DG-ID, DP-ID Operation*1
*1 DG-ID: Digital Group Identification, DP-ID: Digital Personal Identification
5 Watts of Reliable RF Power inside a Compact body"
700 mW Loud Audio Output and Clear Voice"

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Portable Ham Radio Mast LD6.....$66.00

SOTA, POTA, and Portable Ham Radio

Portable Ham Radio Mast HRD LD6 - Lil Dude 6 - . A 6m (actual extended length: 5.9M / 19.3 Ft), just over 1 pound (Roughly 1 pound .75 oz) carbon fiber mast for use with ham radio, parks on the air, summits on the air, fishing, and even impressing your friends with your mast. A total of 20 sections. Materials: Carbon Fiber, ABS.

CLICK https://bit.ly/sara-hrd-ld6

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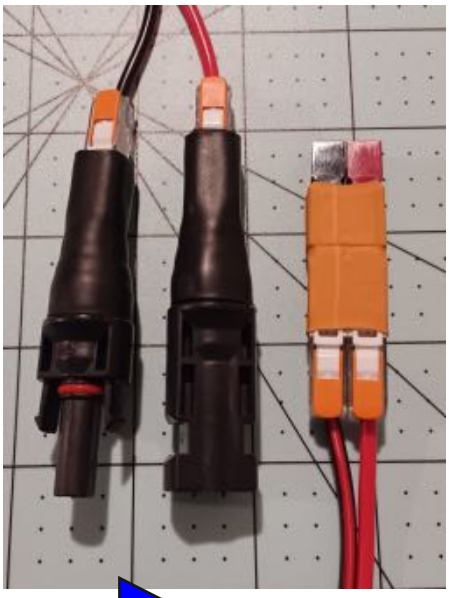
On this page products from ham Kenneth Ezzell KE5EZZ are listed. All prices subject to change. Call before ordering. Note: Skywaves offers these gift suggestions for no compensation. Please work directly with vendors of your choice. Do you own research. Skywaves makes no guarantee or recommendation.

The Original Crimp-less MC4!



Introducing The MC4-QuickCons!
Connect your solar panles to your equipment with ease!
Quick Field Repair , damage connector or wires...cut it off and repair it! ALWAYS BE PREPARED!

Make an extension cord of what length you need...temp or permanent. Just strip the wires, lift tabs all the way up, insert wires, flip tabs down. Level lock technology isures a strong connction.

Only genuine Anderson Powerpole and MC4 crimps and housings are used. UL rated 30 Amps. 12 to 18 AWG

Thanks to KN6YBF for the MC4 version idea of my AP-QuickCon Invention!

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The MC4-QuickCons come in two form factors:
- MC4-QuickCon Regual Set (1 positive and 1 Negitave) for $25
- The MC4-QuickCon Super Set (includes 1 AP-Quick Con) for $30

The Original Crimp-less Powerpole Connector!

AP-QuickCons are a great way to have an Anderson Powerpole connection without having to crimp. Great for the ham shack to quickly test equipment without using your contacts and housings.

Quick Field Repair, adds minium weight to your POTA and SOTA go bags. ALWAYS BE PREPARED! Quickly have a disconnect in your vehicle or ham shack without investing in expensive crimpers and kits. Ease into the Powerpole lifestyle. Only genuine Anderson Powerpole crimps and housings are used. UL rated 30 Amps. 12 to 18 AWG

If you can cut the wire and strip it...you can have a Powerpole connection in moments without crimping!
Simply lift the lever to the full up-right position, insert striped wire, flip down the lever.....get back on the air!
- 1 for $10
- 2 for $18
- 4 for $35
- 6 for $52

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Shipping: Add $5 for US, $20 for Canada & England
Shipped UPS Ground Advantage with tracking number, 3 to 5 days typicaly.

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Explorer POTA20 Portable Handheld 20 ft Telescopic Carbon Fiber POTA Mast.....$98.95

Do you need a portable antenna mast that's both lightweight and reaches impressive heights? Then the GigaParts Exclusive POTA20 is a perfect fit for you:
Ultra-Portable: Made from carbon fiber, the POTA20 is incredibly lightweight, making it easy to carry around. This is ideal if you're setting up your antenna on the go, especially for POTA or SOTA trips. Impressive Reach: Despite being compact, the POTA20 extends a full 20 feet, giving you a significant advantage when transmitting or receiving signals.

CLICK https://bit.ly/gp-pota20

Explorer QRZ-1 5W VHF/UHF Handheld Transceiver.....$59.95

The Explorer QRZ-1 is a lightweight, compact, and easy to operate VHF/UHF handheld transceiver that is perfect for new and old hams alike! It's rugged, and uses high-quality materials. The speaker is loud and clear, and the FM broadcast receiver present on the QRZ-1 is one of the best-sounding receivers you'll find on a handheld radio.

The QRZ-1 features a bright dot-matrix display, so you'll never have to squint or shade the screen in order to read it clearly.

CLICK https://bit.ly/gp-explorer-ht

Intellitron AA-1602 Dipole Antenna Mounting Bracket.....$24.95

Portable Antenna Mount
The AA-1602 dipole mast-mount bracket is a “must have” for assembling a truly superior portable antenna system. Unlike molded center supports, the AA-1602 is constructed from a thick aluminum extrusion that easily supports two fully extended 17-foot collapsible dipole elements without a hint of stress or sag. Also, both dipole legs are electrically isolated from the support mast to ensure true element symmetry. Stormy weather? No problem – the mount’s water-tight SO-239 connector keeps your feedline safe from water incursion.
Accepts standard 3/8-24 inch antenna elements and all support mast diameters up to 1-1/4 inch OD.

CLICK https://bit.ly/4eNEdVD

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Explorer Modular Backpack System Starter MBP-10.....$59.95

The Explorer Modular Backpack is the perfect organization tool for your next adventure! The Explorer Modular Backpack allows you to custom-configure the bag to fit the needs of the mission. It all starts with the backpack. Careful consideration was given to the design starting with its 600d polyester material which is naturally water and stain repellent. We followed it up with a design that opens fully flat, allowing you a workstation that will continue to protect your valuables while you deploy its contents.

CLICK https://bit.ly/3ZnXbxI

Explorer IP-891 Modular Backpack Add-on for FT-891.....$14.95

Ever worry about your Yaesu FT-891 when you're on the go?
The Explorer IP-891 Modular Backpack Add-on is built to tackle that problem head-on. Here's why it's the perfect companion for your radio: **Built-in Protection:** The padded construction keeps your FT-891 safe from bumps and bangs, whether you're hiking through rough terrain or navigating a crowded city. **Modular Magic:** This add-on integrates seamlessly with the Explorer Modular Backpack System. Velcro it in wherever it works best for you, for easy access and customized carrying. No more digging through your bag to find your radio!

CLICK https://bit.ly/4i2cTpD

Explorer IP-705V2 Modular Backpack Add-on for IC-705.....$14.95

Enhance Your Field Operations with the Explorer IP-705V2 Modular Backpack Add-on for IC-705.
The Explorer IP-705V2 Modular Backpack Add-on is the ultimate companion for your IC-705, offering unmatched convenience and protection. This version is upgraded with strategically placed holes for the antenna and power connector, allowing you to operate your device without removing it from the bag. Designed to fit any rail, cage, or skeleton, this add-on ensures your IC-705 is ready for action at a moment's notice.

CLICK https://bit.ly/41cQW1b

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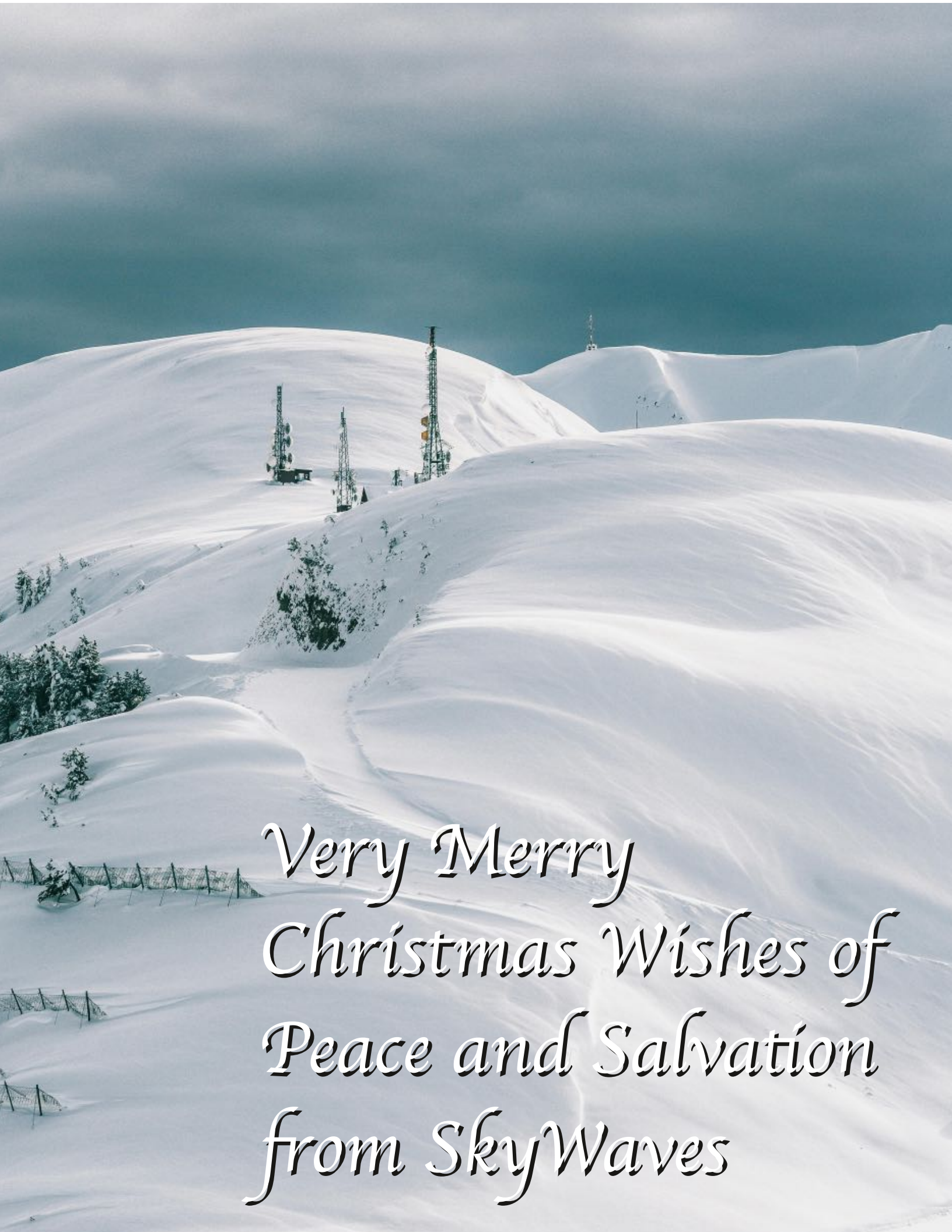
Very Merry
Christmas Wishes of
Peace and Salvation
from SkyWaves